

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re patent application of: ) MMB Docket No.: **1776-0013**  
Inventor: **Steven D. Bush** )  
Application No.: **10/759,970** ) Xerox Docket No.: **D/A 1346-US-NP**  
Filed: **January 16, 2004** )  
For: **Dip Coating Process Using** ) Examiner: **David P. Turocy**  
**Viscosity To Control Coating** )  
**Thickness** ) Group Art No.: **1792**  
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 ) Confirmation No.: **8323**  
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**REPLY BRIEF**

In response to the Examiner's Answer mailed on July 2, 2009, Applicant replies  
as set forth below.

The Examiner Has Failed To Prove That The Cited Combination Arrives At Applicant's Invention Without Recourse To Applicant's Specification

Claim 21 requires:

adjusting the initial pump speed to generate an adjusted vertical flow rate of the CTL solution in the tube in response to deviations of the measured viscosity from the initial viscosity as the substrate is being withdrawn from the tube, the adjusted vertical flow rate being selected in accordance with a magnitude of the deviations and the predetermined pull rate to provide an adjusted differential rate to maintain the target thickness of the CTL coating on the substrate as the substrate is withdrawn from the tube.

No findings of fact have been established that make this limitation available to one of ordinary skill in the art without referencing Applicant's specification. The evidence presented in the Examiner's Answer begins with a combination of Mistrater and Pinsley that arrives at a dip coating process in which the viscosity of the CTL solution is monitored for the purpose of returning the viscosity of the CTL solution closer to its initial viscosity "by the addition of solvent" to the solution. *Answer*, page 4, lines 8-15. An admission is made that such a combination fails to arrive at the claimed invention. *Id.* at line 15. Thus, the teachings of Cai are essential to complete the proposed *prima facie* case of obviousness under review.

Cai concludes his specification by stating:

*Thus, by selecting the appropriate gap distance for a given set of dip coating parameters, the present invention ensures a sufficient shear rate that breaks up flocculates, minimizes vortices and stagnation areas in solutions during the coating process, especially unstable (in the rheological sense), non-Newtonian solutions.*

*Cai*, col. 8, lines 34-45 (emphasis added). In Cai, only after a coating speed is determined for a given set of parameters, which includes viscosity of the coating

solution for a target thickness, is an appropriate gap between the surface being coated and the wall of the dipping vessel selected. As a consequence, if viscosity of a coating solution was monitored (Pinsky) during the dipping process (Mistrater), then the only regulation that would occur would be the return of the coating solution to a viscosity closer to its initial viscosity by adding solvent (Pinsky). Otherwise, a change in viscosity would require another determination of the coating speed *and*, then, selection of a new gap to accommodate the coating speed and viscosity changes (Cai). In other words, Cai uses the equation that relates coating speed to viscosity and layer thickness only for the purpose of selecting a set of coating parameters *that must be maintained for the selected gap distance*. Thus, Cai is just as deficient as Pinsky about the adjustment of a vertical flow rate that is “selected in accordance with a magnitude of the deviations [of viscosity] and the predetermined pull rate to provide an adjusted differential rate to maintain the target thickness of the CTL coating on the substrate as the substrate is withdrawn from the tube” (claim 21).

The process of Cai only adjusts coating speed to vary coating thickness if the viscosity remains at the viscosity used to determine the coating speed. *Cai*, col. 4, lines 50-53. No reference has been cited that monitors viscosity to adjust a vertical flow rate for a coating solution that is selected with reference to the magnitude of the viscosity deviations *and* the predetermined pull rate as required by the claim. The “taking the references collectively” justification for the ground of rejection is an attempt to avoid the absence of a finding of fact directed to this significant claim limitation. Only by adding Applicant’s specification to the list of cited references can the leap over the absence of

this limitation from the prior art be made. Of course, such hindsight use of Applicant's specification is impermissible.

This hindsight use is evidenced by the Examiner's statement that mere disclosure of a pull rate and vertical velocity "must result in a differential rate as required by the claim." *Answer*, page 3, lines 19-21. Although Mistrater discloses a pull rate and vertical velocity for the coating solution, *Mistrater*, col. 20, lines 8-15; col. 22, lines 30-36, the reference does not disclose that a predetermined pull rate and a predetermined vertical flow rate *were selected* in accordance with an initial viscosity to provide a differential rate that enables deposition of CTL coating on a substrate at a target thickness as required by the claim. Instead, Mistrater notes the coating velocity and the pull rate in the portion cited in the previous sentence without any comment regarding the difference between the two rates. The conclusion that these sections disclose a differential rate "as required by the claim" arises from the teachings of Applicant's specification regarding the differential rate and not from Mistrater. Likewise, Pinsly and Cai fail to disclose a differential rate that is determined by selecting a vertical flow rate and a pull rate with reference to a target thickness. After gaining insight into the components for a differential rate the coating speed for a dipping process from Applicant's specification and the regulation of one of those components as taught by Applicant's specification, the Examiner is empowered to reconstruct the otherwise silent references to arrive at the invention of claim 21. Without this insight, the Examiner cannot construct a properly supported obviousness case and the section 103 ground of rejection of the claims should be reversed.

## Conclusion

Without a finding of fact that the limitation regarding the adjustment of the pump speed that is made in response to a change in coating solution viscosity is available in the prior art, no *prima facie* case of obviousness exists. In an effort to remedy this deficiency, the Board is urged to take “the references collectively”; however, the references taken together only arrive at a dipping process that monitors coating solution viscosity to either (1) add solvent (Pinsly) or (2) reconfigure the dipping process with a re-determined coating speed *and* a newly selected gap distance (Cai). The only way the references collectively arrive at the claimed invention is to modify the combination with the teachings of Applicant’s specification. Such modification is impermissible and the section 103 ground of rejection should be reversed.

Respectfully submitted,  
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